

SCIENCES, TECHNOLOGIES AND HEALTH

# Electrical Engineering and Control Systems / MISCIT

## 2nd year

Master in Electronics, electrical energy, automation



Component  
UFR PhITEM  
(physique,  
ingénierie, terre,  
environnement,  
mécanique)



Language(s) of  
instruction  
English

## Presentation

Control and information technology components are increasingly used in complex engineering systems. The pervasive infiltration of computer systems (embedded systems and networks) in engineered products and in society requires new insights and ideas in engineering research, education and entrepreneurship. Model-based system integration methodology combined with an overall emphasis on compositional design methodology then appears as a crucial issue in modern process automation and research in automatic control. The proposed curriculum consequently includes advanced topics in control-oriented modeling, systems theory, supervision communication networks and real-time operation, along with the more classical multi-objective and discrete-events control issues. The aim is to provide high level knowledge and skills for research and developments (R&D) in process automation, from the latest theories to their applications.

<http://www.gipsa-lab.fr/MISCIT/home/>

**International education :** Internationally-oriented programmes

## International dimension

### Study abroad as an exchange student

As part of this track, you have the opportunity to study for a semester or a year at a UGA partner University abroad.

The International Relations Officers of your faculty will be able to provide you with more information.

More information on : <https://international.univ-grenoble-alpes.fr/partir-a-l-international/partir-etudier-a-l-etranger-dans-le-cadre-d-un-programme-d-echanges/>

## Admission


### Access conditions


This two-semester program is a specialty (second and last year, master 2nd year in the French system) of the master EEATS. The French master is 2 year, but when you apply a centralized University board examines your application to grant you, if suitable, the first year as equivalent and at the end of the one-year MiSCIT program you obtain a diploma corresponding to 2 years of studies (master EEATS, MiSCIT specialty diploma).


Eligibility for students

- at least 180 ECTS for the students in an exchange program who wish to join MiSCIT for one semester in order to validate specific classes in their home institution
- at least 240 ECTS (typically 4 years of university studies) for students wishing to validate the master 2nd level

For students from foreign countries who completed a full bachelor program of 4 years or more, your application will be evaluated by a specific jury (called the *Commission de Validation des Acquis*).


Requirement : In order to apply to this master program, the prospective student should hold a master 1st year, bachelor or equivalent degree completed after **four full years of university** studies, have followed basic classes in Automatic control, prove an English proficiency with CEFR (B2), TOEFL (IBT 87-109), IELTS (5.5-6.5), TOEIC (785-945) or  equivalent. Students coming from English-speaking countries or/and who had a university curriculum in English are considered proficient enough. If you don't have the opportunity to take the test in your home University, an English test is organized during the first week of the classes, to check the level of everyone.

For candidates whose country of residence is not included in the "Studies in France" portal (PEF) scheme, the calendar for the eCandidat application campaigns is available  here.

For more informations :  [www.gipsa-lab.fr/MiSCIT/admission.php](http://www.gipsa-lab.fr/MiSCIT/admission.php)


Public continuing education : You are in charge of continuing education :

- if you resume your studies after 2 years of interruption of studies
- or if you followed training under the continuous training regime one of the previous 2 years
- or if you are an employee, job seeker, self-employed

If you do not have the diploma required to integrate the training, you can undertake a  validation of personal and professional achievements (VAPP)

## Candidature / Application

You want to apply and sign up for a Master?

Let us be your guide – simply follow this  link

## Fees

Tuition fees 2023-2024: 243 €+100€ CVEC

## Useful info

### Contacts

#### Program director

Olivier SENAME

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#### Program director

Jean-Marc THIRIET

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#### Program administration

Gestionnaire

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#### Continuing education manager

Laura DI RUZZA

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## Course location(s) - City

 Grenoble

## Campus

 Grenoble - University campus

# Program

## Master 2nd year

### Semester 9 OPTION IPA

	Nature	CM	TD	TP	Crédits
UE Multi-objective control	Teaching Unit (UE)	41h		31h	6 credits
UE Modeling and system identification	Teaching Unit (UE)	24h			3 credits
UE Adaptive control systems	Teaching Unit (UE)	18h		12h	3 credits
UE Embedded control and modeling labs	Teaching Unit (UE)	9h		36h	3 credits
UE Supervision and diagnosis	Teaching Unit (UE)	15h	15h		3 credits
UE Network applications	Teaching Unit (UE)	31,5h		22h	6 credits
UE Design project 1	Teaching Unit (UE)			23h	3 credits
UE English	Teaching Unit (UE)		24h		3 credits
UE French as a foreign language	Teaching Unit (UE)				3 credits

### Semester 9 OPTION CST

	Nature	CM	TD	TP	Crédits
UE Multi-objective control	Teaching Unit (UE)	41h		31h	6 credits
UE Modeling and system identification	Teaching Unit (UE)	24h			3 credits
UE Adaptive control systems	Teaching Unit (UE)	18h		12h	3 credits
UE Nonlinear and predictive control	Teaching Unit (UE)	34h			6 credits

UE Design project 1	Teaching Unit (UE)		23h		3 credits
UE Efficient methods in optimization	Teaching Unit (UE)	27h			3 credits
UE Modeling and control of PDE	Teaching Unit (UE)	42h			6 credits
UE Embedded control and modeling labs	Teaching Unit (UE)	9h		36h	3 credits
UE Supervision and diagnosis	Teaching Unit (UE)	15h	15h		3 credits
French as a foreign language	Teaching Unit (UE)				3 credits
UE English	Teaching Unit (UE)		24h		3 credits

## Semester 10 OPTION IPA

	Nature	CM	TD	TP	Crédits
UE Project management and seminars	Teaching Unit (UE)	25,5h	60h		3 credits
UE Internship	Teaching Unit (UE)				24 credits
UE Systems Reliability and Maintenance	Teaching Unit (UE)			6h	3 credits

## Semester 10 OPTION CST

	Nature	CM	TD	TP	Crédits
UE Project management and seminars	Teaching Unit (UE)	25,5h	60h		3 credits
UE Internship	Teaching Unit (UE)				24 credits
UE reinforcement learning and optimal control	Teaching Unit (UE)	32h			3 credits